

AN INTERVIEW WITH

AWDRY JULIUS
(ENGINEER)

BY

J.N. LUDLOW

A. JULIUS

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JNL

Mr. Julius I understand that the firm of Julius Poole and Gibson is the longest continuing firm of Consulting Engineers in Australia? Before we deal with your own particular record with the firm and in Consulting, if you could tell us a little bit about what you remember of the early days with that firm founded by your father.

AFJ

Right. The firm was started in 1907 by my father. I would just like to give a brief run down of his experience and so on why he started it. He was born in England in 1873 and he came out to Ballarat in 1884 with his father who was appointed Archdeacon. He went to Melbourne Grammar School and then in 1890 my grandfather was moved to Christchurch, New Zealand as Bishop of Christchurch. My father had just finished school and he then went to Canterbury College which is the oldest Engineering school in New Zealand and he became the first Engineering graduate of that college.

In 1896 he was appointed as assistant Engineer with the Locomotive Department in the Western Australian Railways and became Chief Draftsman and Engineer in charge of tests. He carried out some very well known timber tests and wrote a report on them which became a standard book of reference for many years on the strength of timbers. He resigned in 1907 because he was sick of Government work. He came over here and started his practice.

He became very active in the Engineering profession here. He was President of the Engineering Association of N.S.W. from 1911-1913 and President of the Electrical Association of N.S.W. from 1917-1918. He was a member of committees which formed the Institution of Engineers Australia and he was on the first council for 20 years and was President in 1925. He was largely responsible for the formation of the Standards Association of Australia. He was the first Vice President in 1922 and President from 1925 to 1939.

In 1926 he was asked by Lord Bruce or Mr. Bruce as he was then whether he would form a scientific and research body which he agreed to do and he had to select two other commissioners and he selected Dr. Rivet and a man named Newbiggen who was then Chairman of William Adams. It was rather amusing after the appointment somebody got up in the house and said "what's this Council for Scientific and Industrial Research, two bloody plumbers and a pill roller". So they were always known as the two bloody plumbers and the pill roller. He was also Chairman of the National Research Council and a member of Rotary and President in 1932 and he was knighted in 1929. He did get the P ^N R Medal of the Institution of Engineers and the Kernot Memorial Medal of Melbourne University.

P N Russell

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In 1980 he invented the totalizator which he carried on for a great many years. He was in practice by himself until 1914.

JNL

Where did he first commence practice when he started in 1907?

AFJ

In Sydney - all his practices all the time were in Sydney. In various locations although the practice from 1913 onwards was in Colwallah Chambers, Castlereagh Street until 1970 when we moved to North Sydney.

I have an old account book there which accounts for all the accounts up to the time he took in another partner and there were about 150 accounts altogether. The first one was with the Sydney Municipal Council when he reported on one of the engines in the Power House there giving trouble and also on the interference to the staff by the aldermen. It is interesting that there were about 150 accounts altogether, the total fees over that period was 13,000 pounds - six years. The three largest fees were New Zealand Green Stone which was a mining proposition over in New Zealand of which the total fee he got was 1250 pounds and the report on the Cockatoo Naval Dockyard was 750 pounds and various work which he did for many totalizators which was 1200 pounds.

There were fairly wide variations in the sort of things he was doing. Early on there were timber industry people which he did most of the work for the well known. I think that was the result of the tests he did in Western Australia on timber. He did work for mining companies, coal mines and so on, mainly on their Electrical side, power house and things like that. Then work in connection with city buildings and so on - minor varieties, there wasn't much of it in those days.

He did quite a number of legal expert witness cases during the period and that reminded me of the story he told of Frank Le Verier who was the leading Kings Council in scientific subjects in those days and my father had worked with him on a numbers of cases and he had seen him tie expert chemists up without any help from any outsider because he had taken all the gold medals in science before he did law. He had my father in the box on one occasion on the opposite side and he asked him a chemical question. My father looked at him and said "I'm sorry, I'm an Engineer I can't answer that. Le Verier said "you known enough chemistry to answer that" and my father said "not with you cross examining". He knew once he started, he was in the soup which was one of the lessons he always gave me because I did quite a bit of legal work that way. Never talk beyond what you know otherwise if they've got a smart fellow on the other side you would be in trouble.

The bulk of the cases were done on just a fee for a report or something and they varied from 3 pounds upwards and some work was done on a percentage basis of 5% in those days.

Well that really took matters up to the time when he took his partner, William Poole in 1914. Poole was a mining Engineer, a Civil mining Engineer. He was Director of the Queensland State School of Mines, Charters Towers in 1904 - 1912. 1912-14 he was Principal of the Ballarat School of Mines and in 1923 he got a Master of Engineering, Sydney University. He also was active in the Institution of Engineers on the Council and so on.

He carried on with the firm until he died suddenly in 1929. So he wasn't a great deal of time with the firm and a great deal of that time was with the First World War so there wasn't a tremendous work went on. In 1922, A.J. Gibson joined. He was born in London in 1876, came to Australia in 1900 and worked with Morts Dock and the PWD until 1903. In 1903 he was appointed lecturer in Engineering design at Sydney University. 1910 he became a Professor of Engineering at Queensland University. 1914 he was called up for war work and he became the Acting General Manager and Chief Engineer for the Commonwealth Arsenal. 1919-22 he was Superintendent of Construction at the BHP at Newcastle. He was a foundation member of the Institution of Engineers, Councillor from 1921-1941 and President in 1932. He was also on the SAA Council and Chairman from 1940-48. He was a fellow of the University Senate. He carried on until he retired in 1951. He became the senior partner when my father died in 1946. That was the history of the three main partners who formed the firm.

JNL

What sort of work were they doing in those early years? It would seem that your father, for instance, did what would probably be called now, Electrical, Mechanical even Structural if he was involved in timber as well.

AFJ

Mainly Electrical, Mechanical, design of trains and all sort of oddments that you did in those days. Alec Gibson was primarily a Mechanical and a Structural and Civil man. More the Structural and Civil side.

JNL

What sort of numbers did they employ in those days?

AFJ

It wouldn't be many more than 8 to 10 I suppose. Occasionally it would go up and down a little bit but there were never any great numbers. It never has been a very large firm, even today the numbers are relatively small when you talk alongside McDonald Wagner. I think the present numbers are about 25 to 30.

JNL

So you were at that time doing most of the Civil, Structural, Mechanical and Electrical at least towards the end of the 30s and 40s.

AFJ

We were all doing that sort of work, yes, even then, up in the 40s, we were not by any means, the biggest of them but there were no outstandingly large ones at that time, they came in a bit later. Like Gutteridge Haskins and Davey and McDonald Wagner and one or two of the others became very large.

JNL

Turning to yourself, when did you first join the firm.

AFJ

I joined the firm in 1925. Prior to that I graduated in Sydney, I had two years then with the General Electric Company in America. They used to take on University Graduates from all over the World and you did their testing work of all the plant that they manufactured before it went out to the customer and they moved you around the shop to all the different types of equipment and it was extremely good experience and you were under no obligation to stay with them or for them to find you a job afterwards. Usually they would do so if you wanted to but in my case I was coming back here. I had a job to come to and it was very useful experience. When I came back in 1925 I worked as an employee until 1944 when I became a partner.

JNL

Could you tell us a little bit about what it was like first of all working for a Consulting Engineering firm in those late 20s early 30s and how much did the depression affect the work volume that you were getting.

AFJ

Well, first of all on the money side I started on 8 pounds a week in 1925 and I think by the time in 44 when I became a partner it had gone up to 17 pounds a week. So it wasn't very large. Even after in the first two years it only amounted to 25 or 30 pounds a week but went up considerably after some years.

I was engaged mostly on lift work. We did some of the biggest lift jobs in those days. The big David Jones one in Elizabeth Street which was the biggest lift contract in the Southern Hemisphere when it was let so Otis Elevator said. The Sydney Morning Herald, then we did a number of other city buildings in that way. Similarly with Electrical installation work, we did the same thing. We did a certain amount of Mechanical but not so much.

JNL

Were the lifts in Sydney in those days all Electrical. Were there some hydraulic lifts.

AFJ

There were a few, like there are some put in today but they were only very limited in short travel. Of course they became more and more complex on their control as the years went by.

JNL

How many people would have been employed including yourself roughly in the days of the 1920s when you joined?

AFJ

I would think not more than 15 at the most, sometimes less. Apart from that I was also doing a considerable amount of design on automatic totalizers. We did designs in our office. They were all done in our office before the company actually put in their own design staff. We did all the designs for the Totes all around the World including France, England, America, all through the Malay states, New Zealand.

JNL

Did they send you over to install them?

AFJ

No I didn't go over on the installation side. Also I did spend a good deal of time outside on the Standards. My father and Alec Gibson both urged that we should do anything in any way on that sort of work. I was Chairman of the Lift Committee of the Standards from 1929 to the early seventies. I was also active on the first Wiring Rules Committee when it first started and eventually I was Chairman of that for some years too. So they took up a considerable amount of time plus work with the Institution. The firm as a whole did a tremendous amount of work in that way because both father and Alec Gibson spent a lot of time on it as well.

JNL

Did you do much work outside of the Metropolitan area yourself. Did you find yourself travelling much and if so, how did you travel. Did you have a car or did you go by train?

AFJ

We didn't do a tremendous amount of work. We did a bit of work in Melbourne, mainly with architects on lifts and Electrical installations on some of the big hospitals there. That was with Stevenson and Turner

who were the hospital architects. We did a little in the country but not a tremendous amount. The sort of work we were doing didn't fit. We did some Electrical reticulations for some of the local towns, local undertakings. Sometimes you drove, sometimes you took the train.

Shortly after the War, it was really before I started, we did a very big job in Queensland. That was the water supply for Rockhampton and that took a lot of time. Alec Gibson and Poole were largely engaged on that because it was more of a Civil nature. We also did a very big valuation in 1924 for Brisbane Tramways, we valued all their assets. They were being taken over by the Government or the Local Council I think. The value of the thing, power plant, rolling stock, tracks and everything so that was quite a job. We also did valuations in the State Brickworks and Quarries in Sydney.

In the 40's we did work in Burrinjuck in association with the English Consultants Rendall, Palmer and Triton and the Swedish V.V.B. That was repairs and alterations to the Burrinjuck Dam. No long after that, in Jack Lang's time, Alec Gibson had been very active and was a founder of the All For Australia League which was very anti Lang. So Lang issued instructions that Julius Poole and Gibson would be given no more Government work so we were ostracized until there was a change of Premier.

Another a big valuation job we did was at Balmain Electric Supply Company when that was taken over by the Sydney County Council. I was also another involved in another one of a similar nature in Tasmania when the Hydro Electric Commission took over the Launceston Electricity undertaking and our Chief Council was R.G. Menzies - it was about the last job he did and it was a most entertaining time.

I saw there another instance in how you can get caught in giving evidence. We had a leading accountant in Victoria on our side - he gave his evidence quite satisfactorily, then the opposition barrister got up to cross examine and he said " Mr. So and So, you said so and so, why?" The young fellow scratched his head and fumbled and couldn't answer, so the Council said "and further on you said so and so and so and so, why?" All he asked him was "why". This chap who was the top accountant in Melbourne was so unused to anybody asking him why he made a statement that he couldn't answer it. He was probably right in what he said but he couldn't give any explanation and it flattened him completely.

We did have an office in Melbourne from about 1957 to 1965, mostly on lifts and hospitals and other places down there - Country Roads Board and sundry factories but we gave that up at that period because it was no longer profitable. Then we had a Canberra office in 1965 to 1971 largely at the time we did the National Library there. The lifts, Electrical and Mechanical services so that kept the staff there. We had to have an office there, that was one of the conditions of the NCDC. We were also doing numerous schools and university buildings at the same time.

During the War we did the boiler and steam reticulation for the 3 explosive factories out at Villawood, Leightonfield and Mulwala down on the Murray. They were done for the Government and we also did the work at Concord Hospital. That was on the Structural work, the Electrical and the lifts there and the torpedo factory at Kirribilli there. Those were the major jobs I can think of, the rest of them, a large variety of them and none of them were enormously large but I can't remember them all, a great many of them.

JNL

I'm particularly interested to find out as much as we can about the pre-World War II years. To get the feel of the type of people who worked in Consulting in those days and for instance, I wondered about salaries, were employees in the firm aware of salaries elsewhere or did you just work and salary review every so often.

AFJ

I think the salaries that we were paying at that time - pre-1938, would be on a par with what Engineers, graduates that is, could obtain elsewhere, in fact it was probably higher than what they would get in the Government Department. In fact anybody graduating in those days, the last thing he wanted was a Government Service job because their salaries were appallingly low.

JNL

So Consultants were able to attract reasonably good graduates then because apart from the interest of the work, the salaries were quite competitive.

AFJ

Yes, of course apart from them, you have the draftsmen, of course. It wasn't any great difficulty getting draftsmen, maybe difficult getting good ones, much the same as it is today. We certainly didn't pay them like they are being paid today.

JNL

Did you find that employees tended to stay longer with a firm in those days than they do now?

AFJ

Yes, I think so. We had 2 or 3 in the office who subsequently became Consultants themselves. L.J. Reynolds who was on the Mechanical side, Charlie White and old W.D. Watson. They all went through our office. I think that we kept draftsmen and others for quite a long time then. There wasn't any problem that way. If they were any good, and if we wanted to keep them, we could usually keep them.

JNL

I wonder if you could recall whether many employed draftsmen, and perhaps not Engineers, ever really went on to retire as draftsmen or did they tend to drift off into some other activities in middle age.

AFJ

Well, no I don't think many of them did in those days. More in latter years than in those days because there weren't many opportunities to get into other things in those days.

JNL

Was there an apprenticeship system at all or did they get trained in the firm itself?

AFJ

No apprenticeship. They got some instruction in drafting but other than that they just depended on working in the office and what we taught them. We didn't have many qualified Engineers and as a matter of fact up until that period, I think apart from myself, there would only have been about one other I think, in addition to the partners.

JNL

You were saying that the practice had, and your father had, in his early years, a large number of commissions to do and the average fee wasn't very great. I'm just wondering how much time did partners in those days have to spend in what we call Public Relations. Was the business lunch around in those days?

AFJ

No, we didn't do anything of it. Alec Gibson was very opposed to that. He wouldn't have a bar of that at all, he thought that was all wrong, that you shouldn't be entertaining your customers. There was practically nothing of that sort done in those days that I can recollect.

JNL

So most of the work came from the reputation or possibly from an involvement in some activity where people would be aware of some expertise and might come to you.

AFJ

That is so. My father got the first start when he came over from West Australia. He had introductions to all the timber people here and others and they got around and that's how he first got in on those sort of jobs. Then it was purely on his reputation and the work he did.

Latter years, of course, for a great many years, he did very little Engineering towards the latter end he was tied up with Standards and CSIRO and these other things that he didn't do a great deal of Engineering. Alec Gibson did a lot more because he wasn't tied up in these other things so much.

JNL

What about setting of fees. I've learned a little bit about the early years of the Association of Consulting Structural Engineers as such and how they did help to provide a fairly common front on fee scales. I wonder with Mechanical and Electrical whether you had any discussions with other such firms in those early years.

AFJ

In the very early years I'm not too sure how they were arrived at because it was before there was any form of scale fee at all which didn't come out, as you know, until about 1927 I think. About the time I started there. Well the Institution only formed in 1919 so I don't think it was left entirely to the individual to decide what he wanted to charge as far as I know, I think whether they conferred with one another, I don't know. There weren't many others to confer with.

JNL

So there wasn't much association between the few Mechanical and Electrical Consultants.

AFJ

On the Structural side, of course, you did have the tied Structural Engineers who were tied to one of the steel supply people of course. We didn't have that on the Mechanical and Electrical side, there were no such people you see. On Electrical installations well the only sort of person who might do a bit of it in a small way would be the Electrical contractor but he was pretty limited in what he could do. So you didn't have that competition. Much the same on the Mechanical.

JNL

So when you were involved on aspects of the work that perhaps weren't Electrical or Mechanical, say on the Civil side or the Structural side with Mr. Gibson, I suppose he tended to use the same fee scale as you used for the other work and he wouldn't have had much relationship with the Association of Consulting Structuralists.

AFJ

Well, we stuck to the fees that were laid down by the Institution. You see there wasn't much Structural done by us prior to the first code put out by the Institution.

JNL

Just going back briefly to the Depression years. I wonder if you have any recollections on how it affected the office and yourself, in particular, during those years of 1929/1930.

AFJ

Yes, well there was very little work coming in. Fortunately at that time, as I said before, we were doing all the design work for automatic totalizers and they were very busy with export orders, particularly the big French job for Lanchant and that kept myself and several other designers and draftsmen there continuously busy on it so that really saved the office during the Depression because it was appalling then. We used to have architects coming into the office pedalling cigarettes. There was absolutely nothing, architects were completely out. There wasn't very much other work coming in of any sort.

JNL

But your own firm managed to keep its numbers fairly well up.

AFJ

We had a fairly thin time, I mean we had to go very carefully. Because virtually there was not very much money coming in.

JNL

It was fortunate that people were still following the racehorses.

AFJ

Yes, mainly overseas at that time.

JNL

You were going to make another point about partners' income, I think.

AFJ

Yes, of a matter of interest. I haven't got the figures before 1947 because that was the time that I became a partner and I have copies of all the annual accounts from that period onwards. It's rather interesting that 1947 the partners' total income was 11,500 pounds and that was 42% of the gross income. In 1960 it was up to 40,000 dollars and that was 34% of the gross income and in 1970 it was 70,000 dollars and was 35% of the gross income so that the ratio of the partners' return to their gross income remained between 30 & 40%.

JNL

You became a partner in 1944. So that in the early years of World War II you would still have been employed there. I was just wondering perhaps we could just finish up with any recollections you may have of the period during World War II, the type of work and once again, whether it made much of an impact on the staffing and the work volume in the firm.

AFJ

I haven't got the figure as to actual volume of work they had because they prided these figure that I'd got but we were again fairly busy because we had these jobs for the Government on these explosive factories. They were quite large jobs, they were about 5 or 6 boiler houses plus all the miles of steam reticulation around them which we had to design and supervise so that was quite a job so then, of course, the torpedo factory that was a bit towards the latter end of the War and the Concord Hospital. So those jobs helped out very much.

We did lose some staff. One of my subsequent partners, Johnny Loveday, he's dead now, he was a partner with us for years but he was at the War and Roger Gibson was at the War. So those two were out and I think some of the other staff went too but I can't remember who they were now.

JNL

Mr. Julius, thank you very much for your time.

AFJ

I hope it's what you wanted - I was depending largely on memory.